

SUB. SPEC  
10/762,230

# DISFIGURE-RESISTANT PLASTIC-STRING MAT

## BACKGROUND OF THE INVENTION

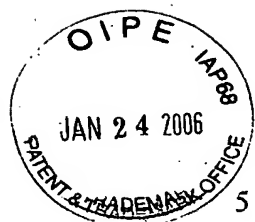
### 1. Field of the Invention

This invention relates to a mat, particularly to one  
a disfigure-resistant mat made of plastic string.

### 2. Description of the Prior Art

Mats are commonly placed at the entrance or the  
doors of living houses or public buildings, for scraping  
10 off dirt, mud or water stuck under shoes by friction  
between the mats and shoes, so inner floors may not be  
smeared.

A conventional plastic-string mat 10 is shown in  
Fig. 1, made of high-molecule plastic elastic slender  
15 strings 11 randomly and irregularly interlocking and  
intercrossing with one another. <sup>It</sup> ~~Then it~~ has countless  
gaps 12 formed among them. Therefore, the plastic  
slender strings 11 may produce friction force to  
effectively scrape dirt, mud or water adhered on the  
20 bottom of shoes worn by people, and dirt, mud or water  
may drop down through the gaps 12 among the plastic  
strings 11 to the ground where the mat is placed. Then  
the upper surface of the mat 10 does not have dirt, mud  
or water remained thereon. Thus the surface of a mat is  
25 not liable to be smeared, kept always clean dry so that it  
may be serviceable for a long term, durable in any kind  
of climate, and <sup>with frequent</sup> ~~quite popular~~ in use.



However, as the conventional plastic-string mat is made of plastic, which is generally contractible, it may shrink to smaller size than its normal one and does not cover the area it needs to. Further, the interlocking and intercrossing plastic strings may produce looseness and elasticity to lower its counter tension force, and once the plastic strings are pulled <sup>with a force sufficient</sup> ~~badly enough~~ to snap, it is not suitable for washing in a washing machine, but <sup>has</sup> ~~have~~ to be washed manually and carefully.

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## SUMMARY OF THE INVENTION

The purpose of the invention is to offer a disfigure-resistant plastic-string mat consisting of a scraping layer and a lattice-shaped net layer fused together and <sup>a non-shrinkable characteristic</sup> ~~characterized by not easily contractible~~ and good counter tension force.

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The feature of the invention is a scraping layer made of high-molecule plastic strings randomly, irregularly piled up, interlocking and intercrossing with one another to form countless gaps. Another feature is a lattice-shaped net layer woven with <sup>a</sup> fiber <sup>and</sup> is fused under the scraping ~~layer~~, <sup>layer. The lattice-shaped net layer is</sup> made of the <sup>a</sup> homogenous material and fused together with the scraping layer by ~~means of~~ <sup>the two layers</sup> ~~immersing~~ <sup>immersing</sup> in <sup>a</sup> plastic solution under <sup>a</sup> high temperature and then ~~cooled~~ <sup>cooling</sup>.

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## BRIEF DESCRIPTION OF DRAWINGS

This invention will be better understood by referring to the accompanying drawings, wherein:

Figure 1 is a perspective view of a conventional plastic-string mat:

Figure 2 is an exploded view of a first embodiment of a disfigure-resistant plastic-string mat in the present invention;

Figure 3 is a cross-sectional view of the first embodiment of a disfigure-resistant plastic-string mat in the present invention; and,

Figure 4 is a cross-sectional view of a second embodiment of a disfigure-resistant plastic-string mat in the present invention.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

A first embodiment of a disfigure-resistant plastic-string mat in the present invention, as shown in Figs. 2 and 3, includes a scraping layer 20 and a lattice-shaped net layer 30.

The scraping layer 20 has a certain thickness, made of high-molecule plastic elastic strings 21 under high temperature and high pressure and cooling, and the plastic strings are formed into countless rings piled up randomly, interlocking and intercrossing with one another and naturally defining countless gaps<sup>22</sup> among them.

The lattice-shaped net layer 30 is woven with strong PET fiber and fused under the scraping layer 20 under high temperature, having <sup>a strength</sup> ~~an anti-tension~~ as strong

as in the scope of 500 - 10,000 N/m, and its surface immersed in plastic solution 32 homogeneous with the scraping layer 20 so that the lattice-shaped net layer 30 may fuse with the scraping layer 20 under high temperature and then cooled to <sup>combine the lattice-shaped net layer 30</sup> firmly combined with the scraping layer 20, without need of using adhesive.

<sup>Since</sup> As the lattice-shaped net layer 30 is made of plastic fiber 31 of high strength and lower tensibility, it may constrict the scraping layer 20 not to shrink or lengthen or disfigure, as it should be otherwise, because of tight fusion of the two layers 20, 30. The elastic strings 21 of the scraping layer 20 would not lengthen or snap, even the mat should be washed in a large washing machine.

Further, a second embodiment of the disfigure-resistant plastic-string mat is shown in Fig. 4, in which a cushion layer 40 is added to be adhered under the lattice-shaped net layer 30, preventing the mat from slipping.

In short, the mat according to the present invention is formed with the scraping layer and the lattice-shaped net layer fused under the scraping layer, provided with advantages of not easily <sup>shrinkable</sup> ~~contractible~~ <sup>making</sup> ~~property~~ and excellent counter tensibility ~~to make~~ it washable in a washing machine.

While the preferred embodiment of the invention has been described above, it will be recognized and

understood that various modifications may be made therein and the appended claims are intended to cover all such modifications that may fall within the spirit and scope of the invention.